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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/827,579 | 04/02/2001 | Charles R. Holdaway | HOL-P1 | 5907 |

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| EXAMINER | |
|---|---|
| BROWN, VERNAL U | |
| **ART UNIT** | **PAPER NUMBER** |
| 2635 | 5 |

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 09/827,579 | HOLDAWAY ET AL. |
| | Examiner | Art Unit |
| | Vernal U Brown | 2635 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *28 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

This action is responsive to communication filed on November 11, 2003.

### *Response to Arguments*

Applicant's arguments filed 11/28/2003 have been fully considered but they are not persuasive.

Regarding applicant's argument regarding turning on the switches simultaneously in the reference of Lay as applied to claim 1, the argued limitation of the sequential transmission of the first and second signal is not in the claim. Claim 1 recites the limitation of requiring an enable and an actuate signal to actuate a launch or firing device but does not include the limitation of the sequence in which the signals are transmitted to the receiver.

Regarding applicant argument regarding claims 16,17, and 19, Lay teaches providing a plurality of output for actuating a plurality launch devices which includes special effects, multiple lights, and pyrotechnic display (col. 3 lines 10-16, col. 3 lines 24-27). One skilled in the art recognizes the conventional practice of the sequential launching of firing device such as special effects, multiple lights, and pyrotechnic display. The reference of Boggs is relied upon for teaching the generation of a plurality output enable signal in a particular sequence (col. 4 lines 60-65).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay U.S Patent 5734968 in view of Marcoux U.S Patent 5623256.

Regarding claims 1, 3-4, Lay teaches a wireless digital launch or firing system (col. 1 lines 61-62) comprising:

(a) a transmitter unit (40) having a first transmitter element for generating a first radio-frequency (RF) signal representing a first digital code sequence (col. 2 lines 26-27), and a second transmitter element for generating a second RF signal representing a second digital code sequence which is different from that of the first RF signal (col. 2 lines 31-32). Lay further teaches a receiver unit for receiving the RF signals transmitted by the transmitter unit (col. 2 lines 35-40) and the different signals activates a first and second switch (col. 2 lines 35-40) but is however silent on teaching demodulating the received signal, a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor. Marcoux in an art related control system teaches demodulating the received signals, a digital processor (202) for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device

receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor (col. 4 lines 52-60).

It would have obvious to one of ordinary skill in the art to demodulate the received signal, having a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor in Lay as evidenced by Marcoux because Lay suggests transmitting dual control signal to operate a firing system and Marcoux teaches demodulate the received signal, having a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor which represents a conventional means of transmitting a control signal to a receiver.

Regarding claim 2, Lay teaches transmitting dual control signal to a receiver (col. 2 lines 26-27) but is silent on teaching the RF signals transmitted by the transmitter are in pulse code form. Marcoux in an art related control system teaches the use of pulse code modulation to

transmit control signals to a receiver (col. 1 lines 59-60) which further represents a conventional modulation scheme.

It would have been obvious to one of ordinary skill in the art for the RF signals transmitted by the transmitter are in pulse code form in Lay as evidenced by Marcoux because Lay suggests transmitting dual control signal to a receiver and Marcoux teaches the RF signals transmitted by the transmitter are in pulse code form which further represents a conventional modulation scheme.

Regarding claims 5 and 7, Lay teaches the code sequences have one bit determined by activation of the first transmitter element (A) and another bit determined by activation of the second transmitter element (B) (col. 2 lines 35-40).

Regarding claim 6, the transmitter unit includes a digital encoder, the first transmitter element as a primary switch which provides one input to the digital encoder, and the second transmitter element as a secondary switch which provides another input to the digital encoder (col. 2 lines 56-65).

Regarding claims 8-9, Lay teaches transmitting dual control signal to a receiver (col. 2 lines 26-27) but is silent on teaching the receiver demodulate the pulse code signals and provides the demodulated signal to a digital decoder which compares them with stored digital code. Marcoux in an art related control system teaches a receiver demodulate the pulse code signals and provides the demodulated signal to a digital decoder (202) which compares them with stored digital code (col. 4 lines 52-60).

It would have been obvious to one of ordinary skill in the art for the receiver to demodulate the pulse code signals and provides the demodulated signal to a digital decoder that

compares them with stored digital code in Lay as evidenced by Marcoux because Lay suggests transmitting multiple control signals to the receiver and Marcoux teaches a method of transmitting multiple control signals to a receiver that includes demodulate the pulse code signals and provides the demodulated signal to a digital decoder which compares them with stored digital code in order to provide a control signal to the remotely controlled device.

Regarding claim 10, Lay teaches a digital code sequence having a plurality of bits which are determine by a user selection (col. 3 lines 10-15).

Regarding claim 11, Lay teaches the code sequences have one bit determined by activation of the first transmitter element (A) and another bit determined by activation of the second transmitter element (B) (col. 2 lines 35-40).

Regarding claim 12, Lay teaches a plurality of bits is determined by user setting of a selectable position switch which supplies bits based on the selected position for the digital code sequences (col. 3 lines 10-15).

Regarding claims 18 and 20, Lay teaches a wireless digital launch or firing device (col. 1 lines 61-62) comprising: (a) a receiver circuit for receiving a first radio-frequency (RF) signal representing a first digital code sequence, a second RF signal representing a second digital code sequence which is different from that of the first RF signal (col. 2 lines 30-45). Lay is however silent on teaching demodulating the received signal, a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a

normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor. Marcoux in an art related control system teaches demodulating the received signals, a digital processor (202) for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor (col. 4 lines 52-60).

It would have obvious to one of ordinary skill in the art to demodulate the received signal, having a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor in Lay as evidenced by Marcoux because Lay suggests transmitting dual control signal to operate a firing system and Marcoux teaches demodulate the received signal, having a digital processor for receiving the demodulated digital code sequences, comparing the received code to the stored code from the receiver circuit and comparing them to stored and a memory latch device which maintains a normally-off primary switch in an "on" condition once the memory latch device receives the "enable" signal from the

digital processor and a normally-off secondary switch which is set to an "on" condition when it receives the "actuate" signal from the digital processor which represents a conventional means of transmitting a control signal to a receiver.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay U.S Patent 5734968 in view of Marcoux U.S Patent 5623256 in view of Angott U.S Patent 4686380.

Regarding claim 13-14, Lay in view of Marcoux teaches the use of memory latch to enable the switches of the control system but is silent on teaching the memory latch device provides an indefinite "enable" period or the memory latch device provides a timed "enable" period. Angott in an art related remote ON/OFF switch circuit teaches a memory latch circuit for holding a set state until a reset state is detected. One skilled in the art recognizes that the reset function provides and an indefinite "enable" period or a timed "enable" period base on the resetting of the memory latch.

It would have been obvious to one of ordinary skill in the art for the memory latch device to provide an indefinite "enable" period or the memory latch device provides a timed "enable" period in Lay in view of Marcoux is as evidenced by Angott because Lay in view of Marcoux suggests of memory latch to enable the switches of the control system and Angott teaches a memory latch circuit for holding a set state until a reset state is detected and one skilled in the art recognizes that the reset function provides and an indefinite "enable" period or a timed "enable" period base on the resetting of the memory latch.

Regarding claim 15, Lay in view of Marcoux teaches enabling the receiver module (U.S Patent 5734968, col. 2 lines 40-45) but is silent on teaching a warning light indication that the primary switch is closed. Angott in an art related remote ON/OFF switch circuit teaches the use of a warning light indication that a switch is closed (col. 4 lines 32-36).

It would have been obvious to one of ordinary skill in the art to have a warning light indication that the primary switch is closed in Lay in view of Marcoux as evidenced by Angott because Lay in view of Marcoux suggests enabling the receiver module and Angott teaches the use of a warning light indication that a switch is closed and one skilled in the art recognizes that warning lights are widely used for warning purposes.

Claims 16-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay U.S Patent 5734968 in view of Marcoux U.S Patent 5623256 in view of Boggs et al. U.S Patent 6094079.

Regarding claim 16, Lay teaches providing a plurality of output for actuating a plurality launch devices (col. 3 lines 10-16). which includes special effects, multiple lights, and pyrotechnic display (col. 3 lines 10-16, col. 3 lines 24-27). One skilled in the art recognizes the conventional practice of the sequential launching of firing device such as special effects, multiple lights, and pyrotechnic display. Lay is however silent on teaching a sequencer module. Boggs et al. in an art related remotely control system teaches a sequencer module for generating a plurality of output signals (col. 4 lines 60-65).

It would have been obvious to one of ordinary skill in the art to have a sequencer module in Lay in view of Marcoux because Lay in view of Marcoux suggests providing a plurality of

output in sequence for actuating a plurality launch devices and Bogg et al. teaches a sequencer module for generating a plurality of output signals and One skilled in the art recognizes the conventional practice of the sequential launching of firing device such as special effects, multiple lights, and pyrotechnic display.

Regarding claims 17 and 19, Lay teaches providing a plurality of output in sequence for actuating a plurality launch devices (col. 3 lines 10-16) but is not explicit in teaching a plurality of serially connected sequencer module. Boggs et al. in an art related remotely control system teaches a sequencer module for generating a plurality of output signals (col. 4 lines 60-65). Boggs et al. further teaches the first sequencer module (210) affecting controlling a second module (240) and module 240 controlling module 260 (figure 3) to provide various outputs.

It would have been obvious to one of ordinary skill in the art to have a sequencer module and a plurality of serially connected sequencer module in Lay in view of Marcoux as evidenced by Bogg et al. because Lay suggests providing a plurality of outputs in sequence for actuating a plurality launch devices and Boggs et al. teaches a sequencer module for generating a plurality of output signals and further teaches plurality of modules to provide various output in sequence.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vernal U Brown whose telephone number is 703-305-3864. The examiner can normally be reached on M-Th, 8:30 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 703-305-4704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vernal Brown
June 3, 2004

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